

I²C PRECISION 24-BIT ADC FOR BAROMETER AND ALTIMETER

Features

- 1.8V to 3.6V Supply Voltage
- Full Data Compensation
- Command-based Reading, Compensated (Optional)
 - Pressure: 20-bit Measurement (Pascals)
 - Altitude: 20-bit Measurement (Meters)
 - Temperature: 20-bit Measurement (Celsius)
- Configurable ADC Decimation Rate via Commands
- Programmable Events and Interrupt Controls
- Altitude Resolution down to 0.01 meter
- High-speed I²C Digital Output Interface (Up to 1 MHz)

Applications

- High Precision Mobile Altimeter / Barometer
- Industrial Pressure and Temperature Sensor System
- Automotive Systems
- Personal Electronics Altimetry
- Adventure and Sports watches
- Medical Gas Control System
- Weather Station Equipment
- Indoor Navigation and Map Assist

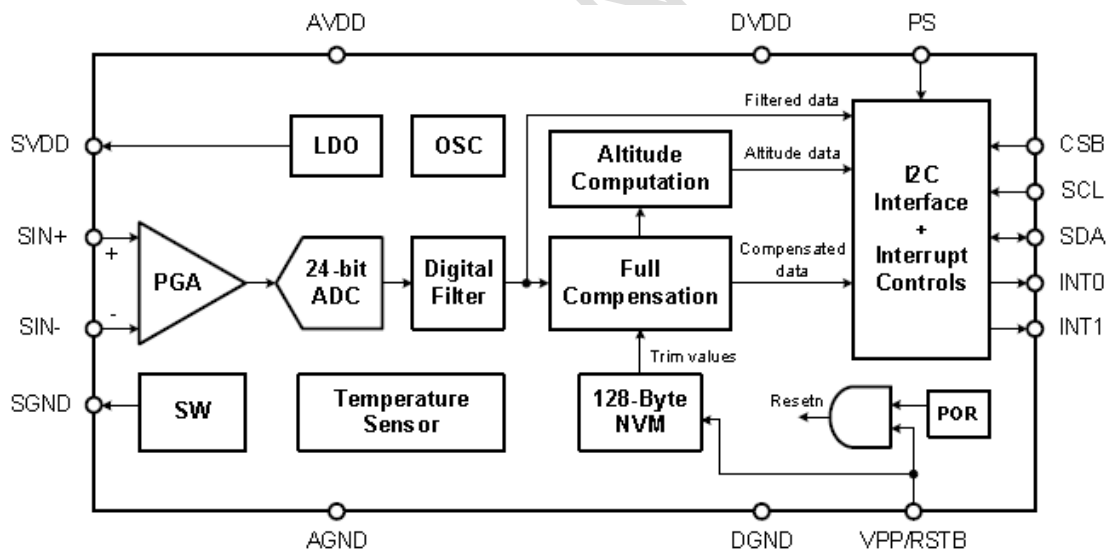


Figure 1: Device block diagram

Descriptions

The CMT3501B2 is an ideal single-chip solution for high precision signal measurement with an I²C interface to provide accurate Temperature, Pressure or Altitude data. The device digitizes the incoming Pressure and Temperature signals by an internal high resolution 24-bit ADC. The Altitude value is calculated by a specific patented algorithm according to the pressure and temperature data. Data compensation is integrated internally to save the effort of the external host MCU system. Easy command-based data acquisition interface and programmable interrupt control is available. Typical active supply current is 5.7uA per measurement-second while the ADC output is filtered and decimated by 256. Pressure output can be resolved with output in fractions of a Pascal, and Altitude can be resolved in 0.01 meter. The CMT3501B2 operated with a power supply from 1.8V to 3.6V and a temperature range from -10°C to 125°C.

